

# ANALYSIS OF THE REGIONAL ROADWAY SAFETY OUTCOMES

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## Crash Analysis – Deeper Dives

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Transportation Safety Subcommittee  
February 11, 2020



# Overview of Priority Area Analysis

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- Pedestrian Involvement
- Intersection Crashes
- Major Arterials



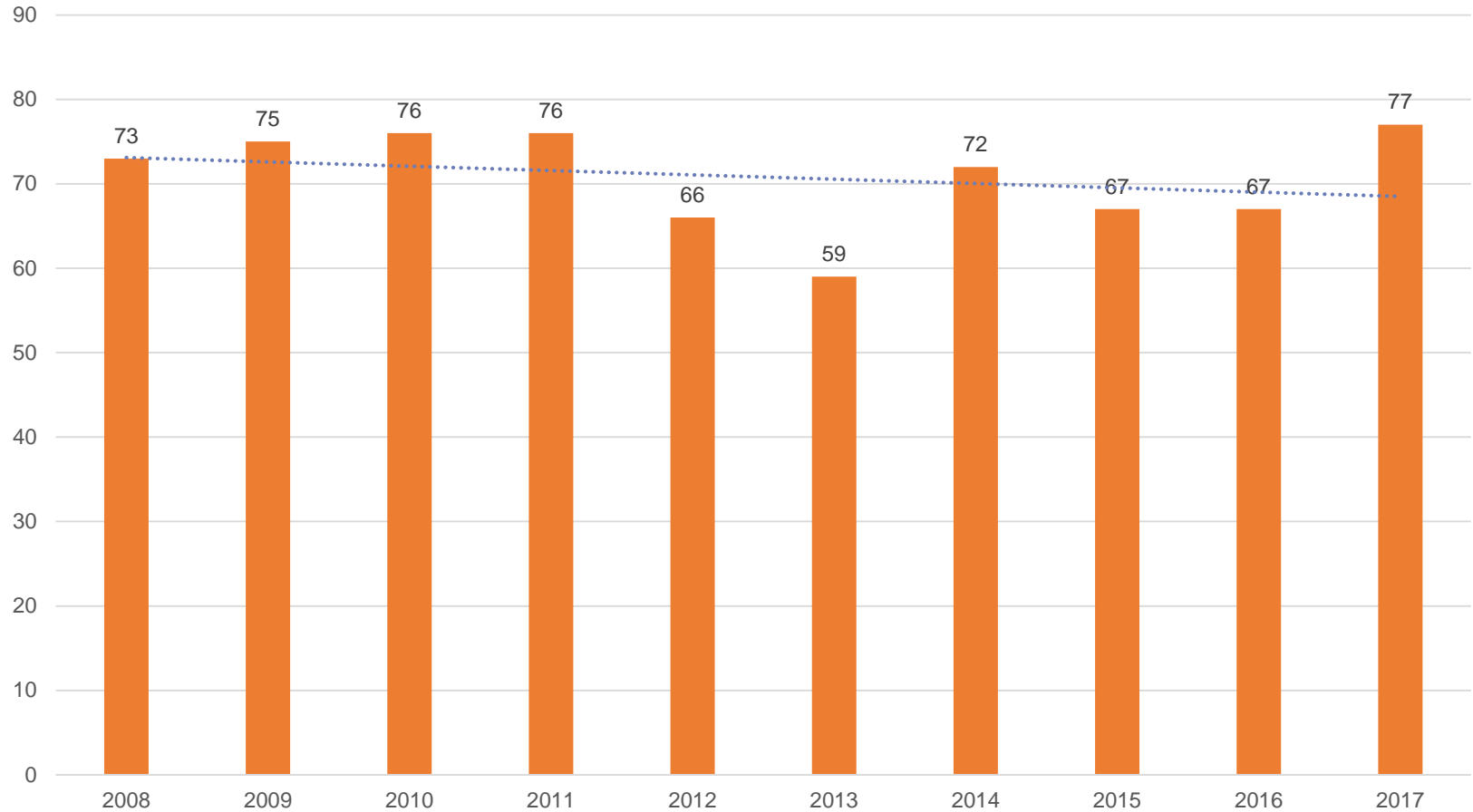
# PEDESTRIANS



# Pedestrian Fatalities

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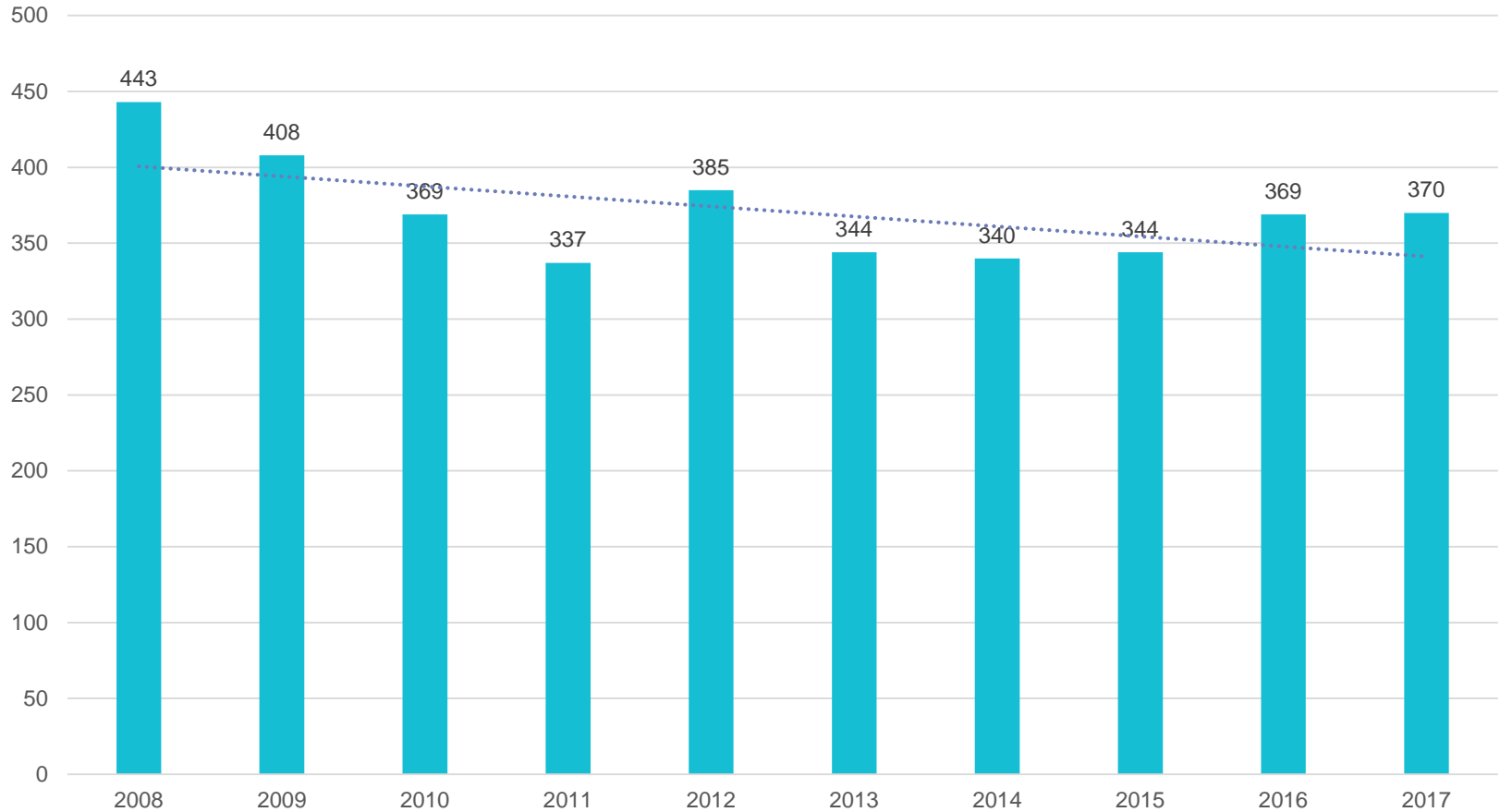
Total Regional Pedestrian Fatalities (FARS)



# Pedestrian Serious Injuries

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Total Regional Pedestrian Serious Injuries (State Data)



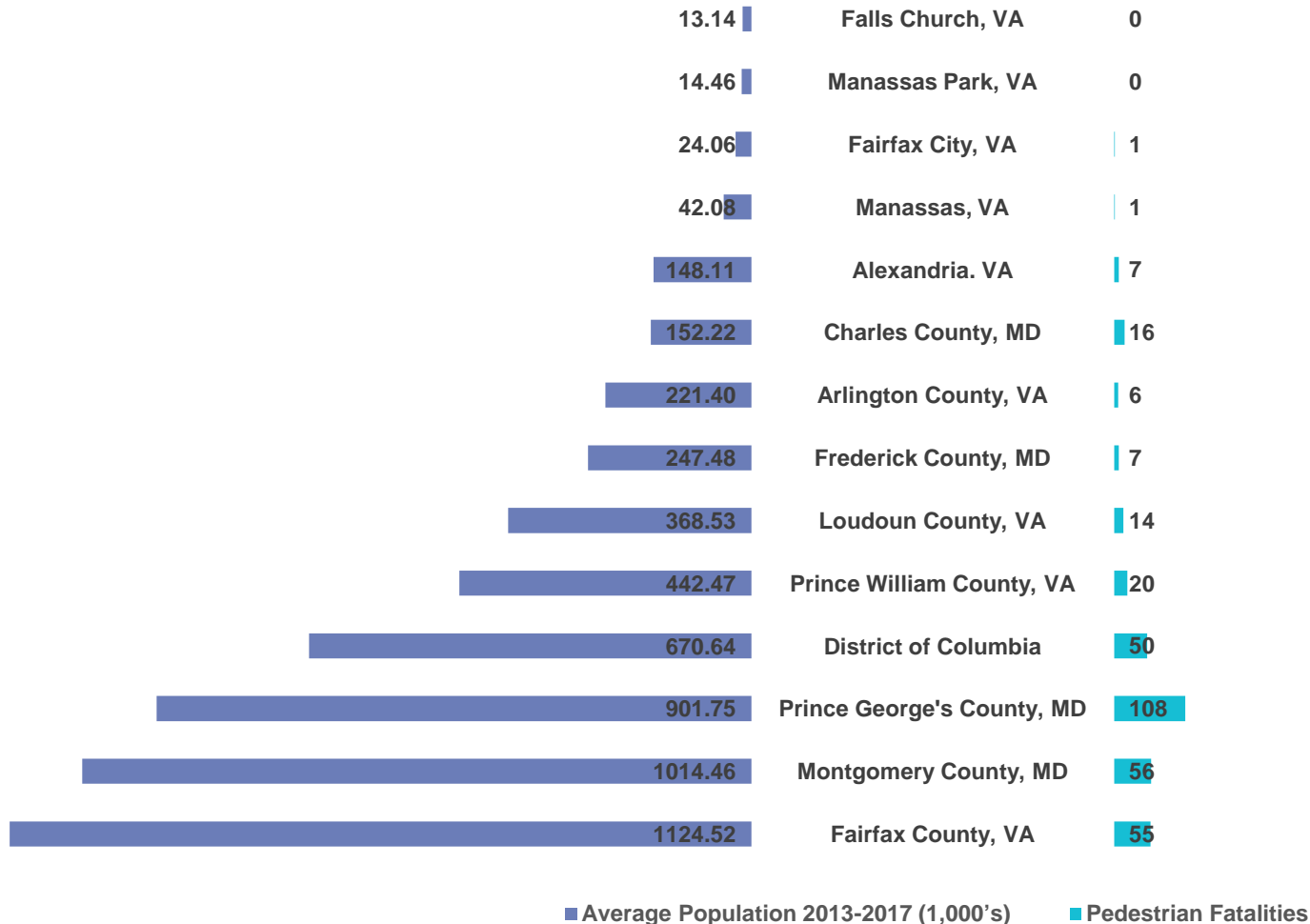
# Crash Severity – By Jurisdiction

Pedestrian Crash Severity by Jurisdiction			
Jurisdiction	Fatalities	Serious Injuries	Total Crashes
District of Columbia	50	399	5431
Charles County, MD	16	49	208
Frederick County, MD	7	36	284
Montgomery County, MD	56	318	2297
Prince George's County, MD	108	269	2156
Arlington County, VA	6	74	693
Fairfax County, VA	55	331	1024
Fauquier County, VA (urbanized area)	1	7	24
Loudoun County, VA	14	57	235
Prince William County, VA	20	96	299
Alexandria, VA	7	58	338
Fairfax City, VA	1	21	54
Falls Church, VA	0	13	30
Manassas, VA	1	39	74
Manassas Park, VA	0	0	7
<b>District of Columbia</b>	<b>50</b>	<b>399</b>	<b>5431</b>
<b>Suburban Maryland</b>	<b>187</b>	<b>672</b>	<b>4945</b>
<b>Northern Virginia</b>	<b>105</b>	<b>696</b>	<b>2778</b>
<b>National Capital Region Total</b>	<b>342</b>	<b>1767</b>	<b>13154</b>



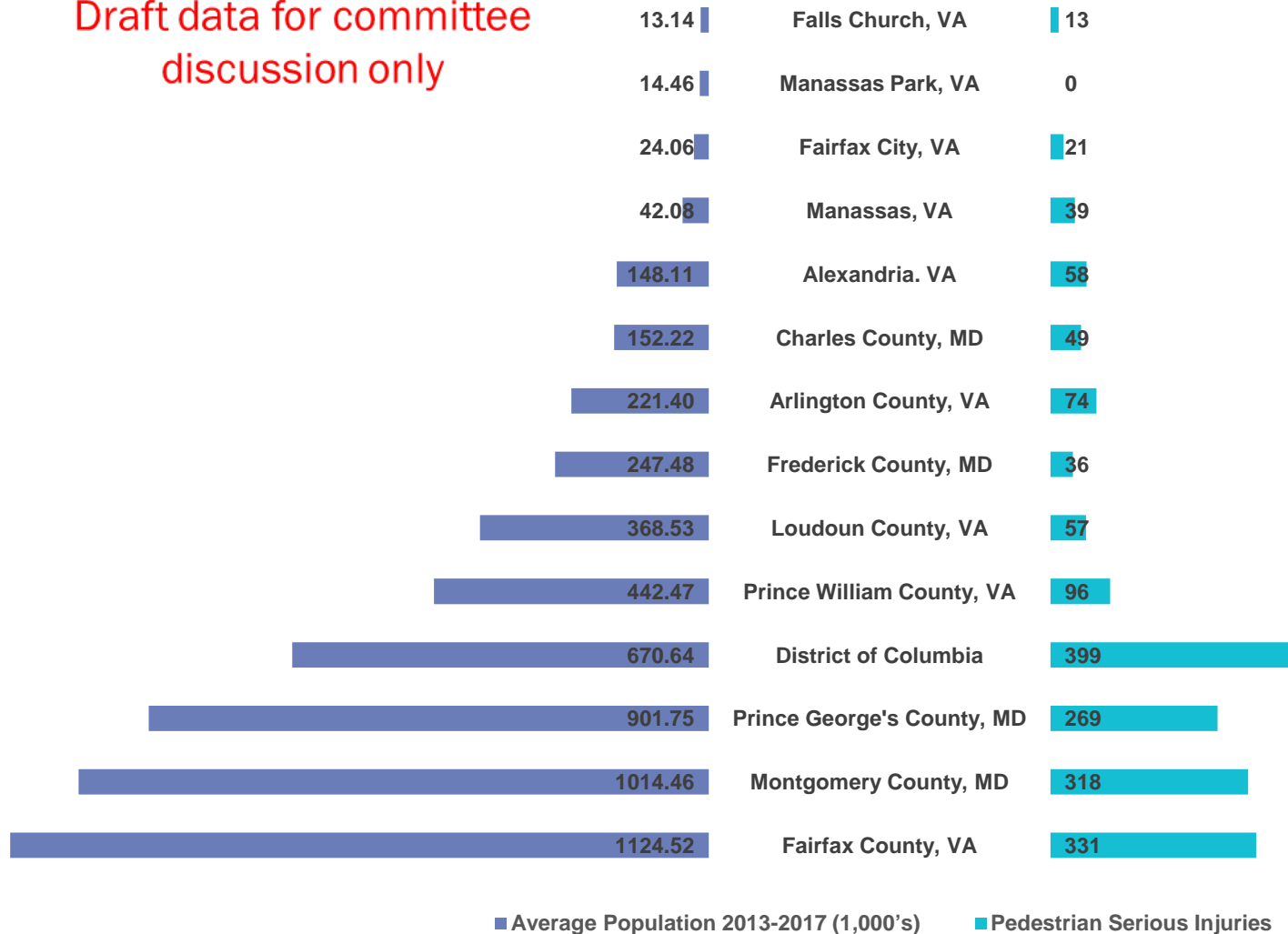
# Pedestrian Fatality Rate by Population

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# Pedestrian Serious Injury Rate by Population

Draft data for committee discussion only





# Pedestrian Crash Severity by Time of Day

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Pedestrian Injury Severity by Time of Day			
Time of Day	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Midnight - 0:59 a.m.	11	37	206
1:00 a.m. - 1:59 a.m.	13	35	161
2:00 a.m. - 2:59 a.m.	13	35	163
3:00 a.m. - 3:59 a.m.	7	31	131
4:00 a.m. - 4:59 a.m.	10	4	67
5:00 a.m. - 5:59 a.m.	15	29	187
6:00 a.m. - 6:59 a.m.	24	65	390
7:00 a.m. - 7:59 a.m.	12	85	623
8:00 a.m. - 8:59 a.m.	3	88	673
9:00 a.m. - 9:59 a.m.	7	57	543
10:00 a.m. - 10:59 a.m.	11	59	498
11:00 a.m. - 11:59 a.m.	8	64	547
12:00 p.m. - 12:59 p.m.	6	64	531
1:00 p.m. - 1:59 p.m.	5	68	588
2:00 p.m. - 2:59 p.m.	9	84	726
3:00 p.m. - 3:59 p.m.	11	107	872
4:00 p.m. - 4:59 p.m.	12	104	862
5:00 p.m. - 5:59 p.m.	12	151	1103
6:00 p.m. - 6:59 p.m.	25	166	1151
7:00 p.m. - 7:59 p.m.	26	137	911
8:00 p.m. - 8:59 p.m.	34	103	757
9:00 p.m. - 9:59 p.m.	33	99	632
10:00 p.m. - 10:59 p.m.	28	92	518
11:00 p.m. - 11:59 p.m.	18	65	311



# Pedestrian Crash Severity by Day of Week

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Pedestrian Injury Severity by Day of the Week			
Day of Week	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Sunday	39	215	1272
Monday	41	277	1838
Tuesday	50	280	2076
Wednesday	51	278	2091
Thursday	66	249	2006
Friday	48	296	2183
Saturday	58	235	1688



# Pedestrian Crash Severity by Month of Year

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Pedestrian Injury Severity by Month			
Month	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
January	28	151	1162
February	28	136	929
March	27	145	984
April	23	149	1027
May	31	155	1101
June	23	150	1087
July	22	109	892
August	29	160	967
September	24	156	1117
October	40	180	1389
November	38	163	1242
December	40	176	1257

# Pedestrian Crash Severity by Location

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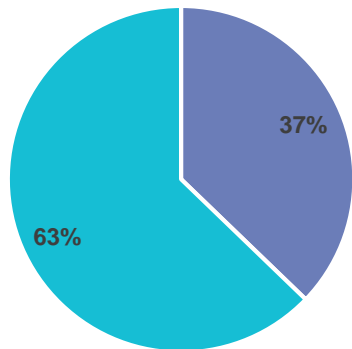
Injury Severity by Pedestrian Location			
Pedestrian Location	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Unknown	65	414	4270
Unmarked Crosswalk	6	54	386
Marked Crosswalk	61	536	3927
Sidewalk	7	33	252
In Roadway/Unmarked Midblock/Not at Intersection	197	675	3770
Median/Island	2	4	28
Outside Roadway	15	114	521



# Pedestrian Crash Severity at or Near Intersections

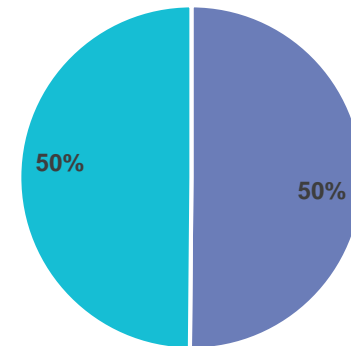
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Pedestrian Fatalities



■ Intersection ■ Non-Intersection

Pedestrian Serious Injuries



■ Intersection ■ Non-Intersection



# Pedestrian Crash Severity by Gender and Age

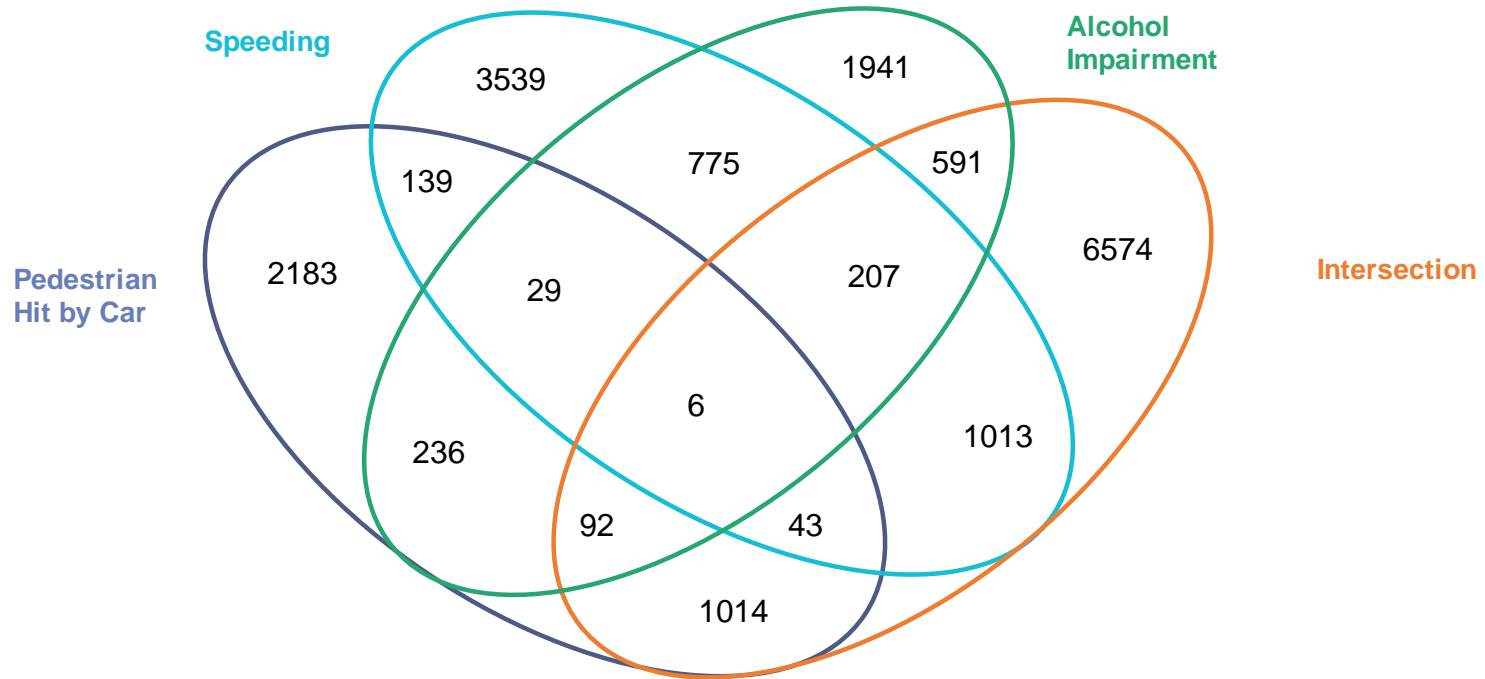
Injury Severity by Pedestrian Age (Females)			
Pedestrian Age	TPB Region		
	Fatalities	Serious Injuries	Total Pedestrians in Crashes
Younger than 5	3	12	155
5-9	0	20	172
10-14	2	30	282
15-19	7	62	519
20-24	8	83	743
25-29	6	75	775
30-34	10	50	645
35-39	8	37	466
40-44	2	36	374
45-49	8	53	396
50-54	11	50	417
55-59	9	50	390
60-64	11	43	344
65-69	6	37	247
70-74	7	22	147
75-79	8	20	121
80-84	6	9	60
Older than 84	7	7	48

Injury Severity by Pedestrian Age (Males)			
Pedestrian Age	TPB Region		
	Fatalities	Serious Injuries	Total Pedestrians in Crashes
Younger than 5	6	15	190
5-9	2	31	312
10-14	0	40	380
15-19	8	84	555
20-24	20	121	744
25-29	16	127	801
30-34	20	95	691
35-39	21	82	582
40-44	18	57	451
45-49	16	78	504
50-54	22	79	508
55-59	24	64	451
60-64	24	59	416
65-69	7	43	242
70-74	13	25	164
75-79	8	18	94
80-84	4	5	58
Older than 84	3	17	90



# Contributing Factors (Fatalities and Serious Injuries 2013-2017)

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# INTERSECTIONS

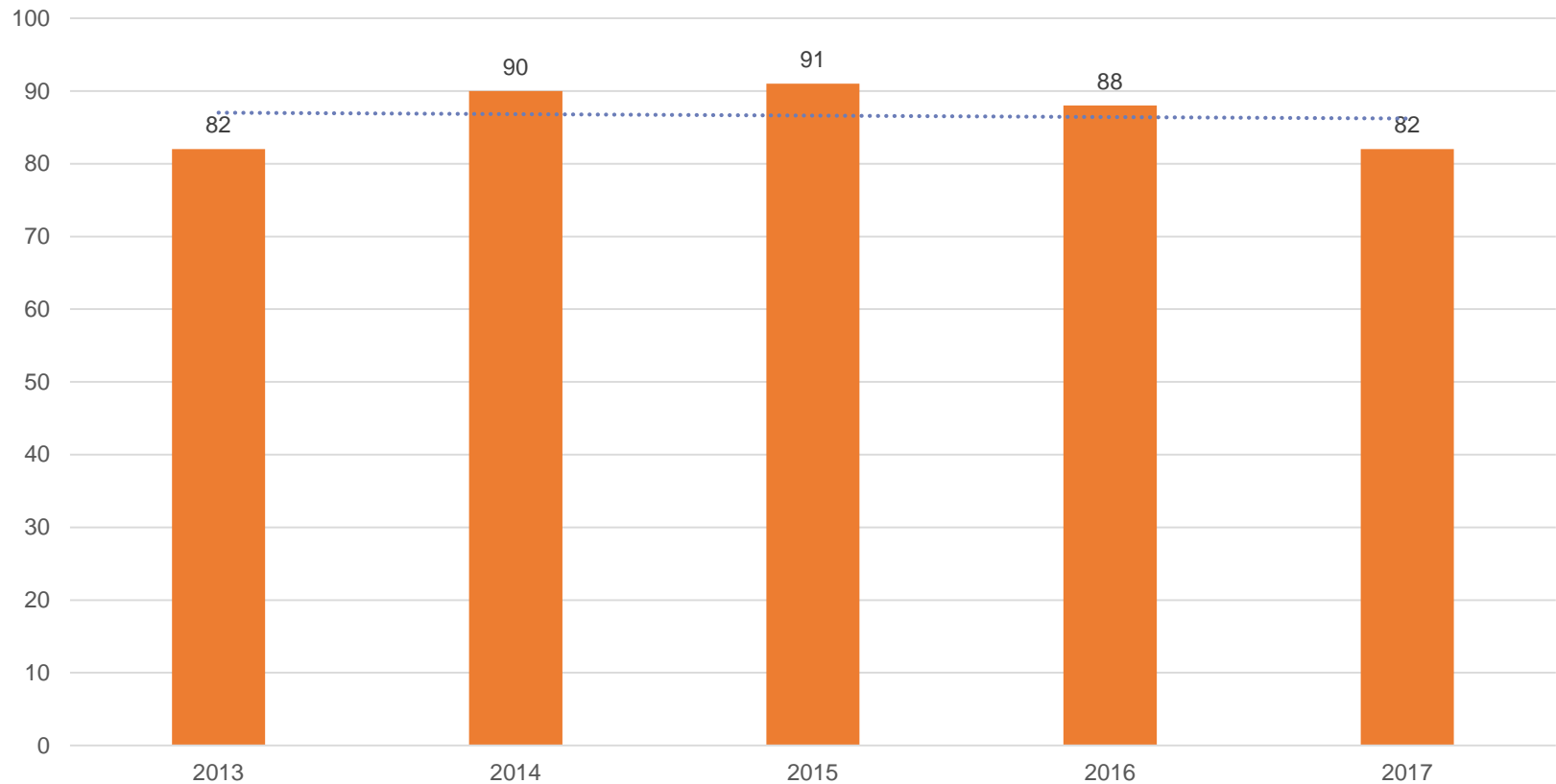




# Intersection Fatalities

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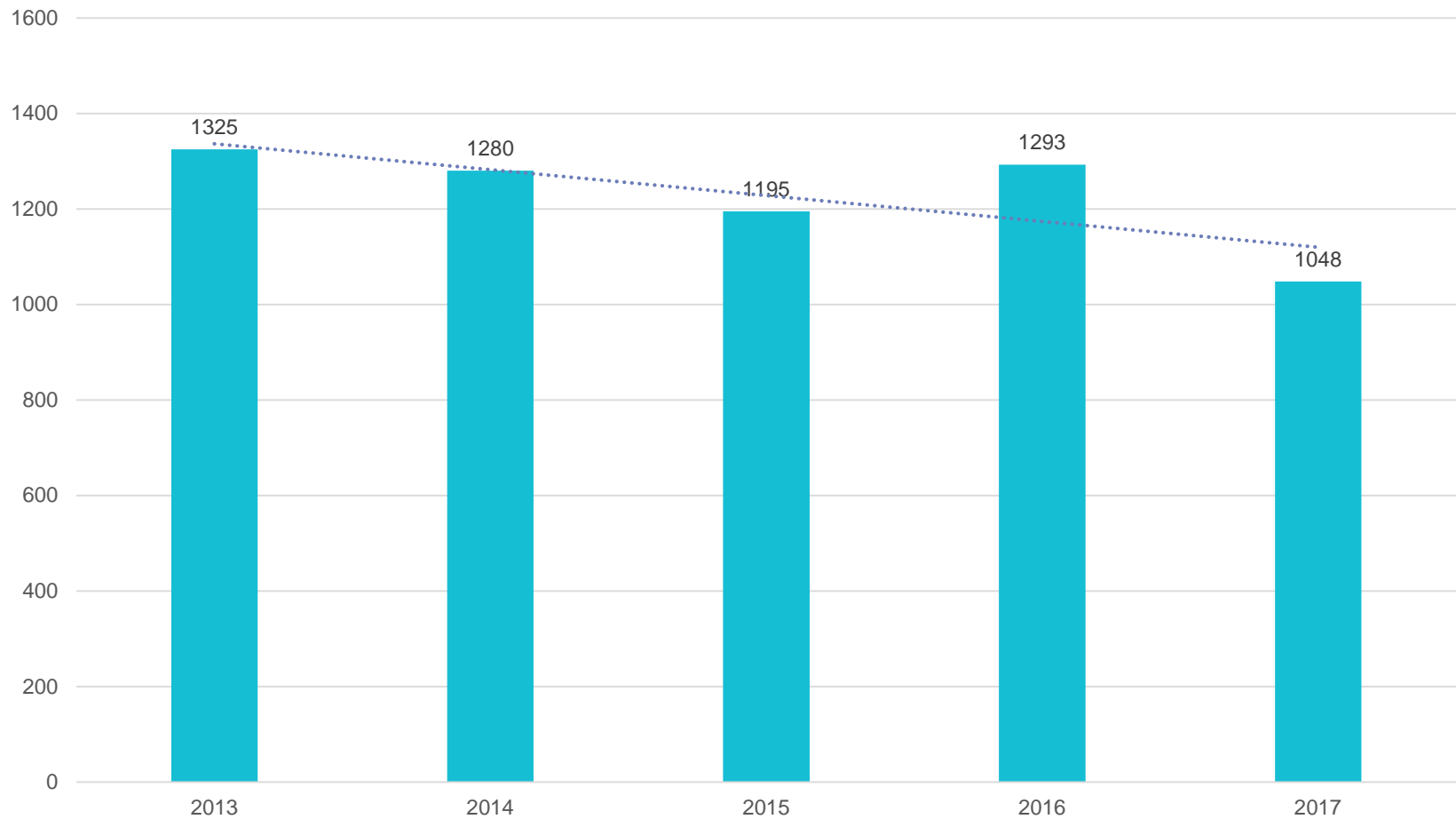
Total Regional Fatalities at or Near Intersections (State Data)



# Intersection Serious Injuries

Draft data for committee discussion only

Total Regional Serious Injuries at or Near Intersections (State Data)



# Intersection Crash Severity by Jurisdiction

Draft data for committee discussion only

Intersection Crash Severity by Jurisdiction			
Jurisdiction	Fatalities	Serious Injuries	Total Crashes
District of Columbia	56	929	57450
Charles County, MD	24	379	4323
Frederick County, MD	16	139	4244
Montgomery County, MD	79	954	23860
Prince George's County, MD	118	733	22101
Arlington County, VA	9	152	6290
Fairfax County, VA	58	1479	27461
Fauquier County, VA (urbanized area)	1	37	690
Loudoun County, VA	19	439	10983
Prince William County, VA	44	463	12905
Alexandria, VA	4	119	4004
Fairfax City, VA	4	60	1339
Falls Church, VA	0	44	339
Manassas, VA	1	210	1900
Manassas Park, VA	0	4	215
<b>District of Columbia</b>	56	929	57450
<b>Suburban Maryland</b>	237	2205	54528
<b>Northern Virginia</b>	140	3007	66126
<b>National Capital Region Total</b>	<b>433</b>	<b>6141</b>	<b>178104</b>



# Intersection Crash Severity by Time of Day

Draft data for committee discussion only

Intersection Injury Severity by Time of Day			
Time of Day	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Midnight - 0:59 a.m.	12	154	3365
1:00 a.m. - 1:59 a.m.	18	98	2425
2:00 a.m. - 2:59 a.m.	15	131	2329
3:00 a.m. - 3:59 a.m.	9	78	2161
4:00 a.m. - 4:59 a.m.	5	45	1455
5:00 a.m. - 5:59 a.m.	12	91	2337
6:00 a.m. - 6:59 a.m.	10	216	4708
7:00 a.m. - 7:59 a.m.	21	284	8420
8:00 a.m. - 8:59 a.m.	12	329	10665
9:00 a.m. - 9:59 a.m.	17	273	9337
10:00 a.m. - 10:59 a.m.	16	255	7987
11:00 a.m. - 11:59 a.m.	15	272	8386
12:00 p.m. - 12:59 p.m.	16	299	9528
1:00 p.m. - 1:59 p.m.	16	321	9573
2:00 p.m. - 2:59 p.m.	22	319	10381
3:00 p.m. - 3:59 p.m.	19	415	12595
4:00 p.m. - 4:59 p.m.	12	409	13072
5:00 p.m. - 5:59 p.m.	22	431	14354
6:00 p.m. - 6:59 p.m.	37	427	12640
7:00 p.m. - 7:59 p.m.	22	315	8883
8:00 p.m. - 8:59 p.m.	27	311	6960
9:00 p.m. - 9:59 p.m.	32	271	6454
10:00 p.m. - 10:59 p.m.	22	219	5543
11:00 p.m. - 11:59 p.m.	24	177	4539



# Intersection Crash Severity by Day of Week

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Intersection Injury Severity by Day of the Week			
Day of Week	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Sunday	63	773	18669
Monday	52	870	24522
Tuesday	52	875	27218
Wednesday	60	899	27167
Thursday	71	863	27256
Friday	68	966	29366
Saturday	67	895	23907



# Intersection Crash Severity by Month of Year

Draft data for committee discussion only

Intersection Injury Severity by Month			
Month	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
January	32	420	13632
February	29	390	12065
March	37	426	13430
April	28	494	14103
May	37	587	15636
June	41	540	14768
July	27	543	14083
August	42	587	14541
September	39	549	15875
October	36	599	17597
November	49	524	16252
December	36	482	16123



# Crash Severity by Intersection Control Type

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Injury Severity by Intersection Control Type			
Intersection Control Type	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Flashing	13	89	4222
Officer or Flagger	0	15	441
Other	27	308	11653
Signal	225	3311	100074
Stop Sign	68	837	25240
Turn Restricted	0	2	63
Yield	9	39	2383



# Intersection Crash Severity by Functional Class

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Intersection Injury Severity by Functional Class			
Functional Class	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Collector	53	1045	28744
Expressway	17	132	3584
Freeways	10	165	5586
Major Arterial	185	2226	68598
Minor Arterial	147	2475	68505
Ramp	3	66	1878

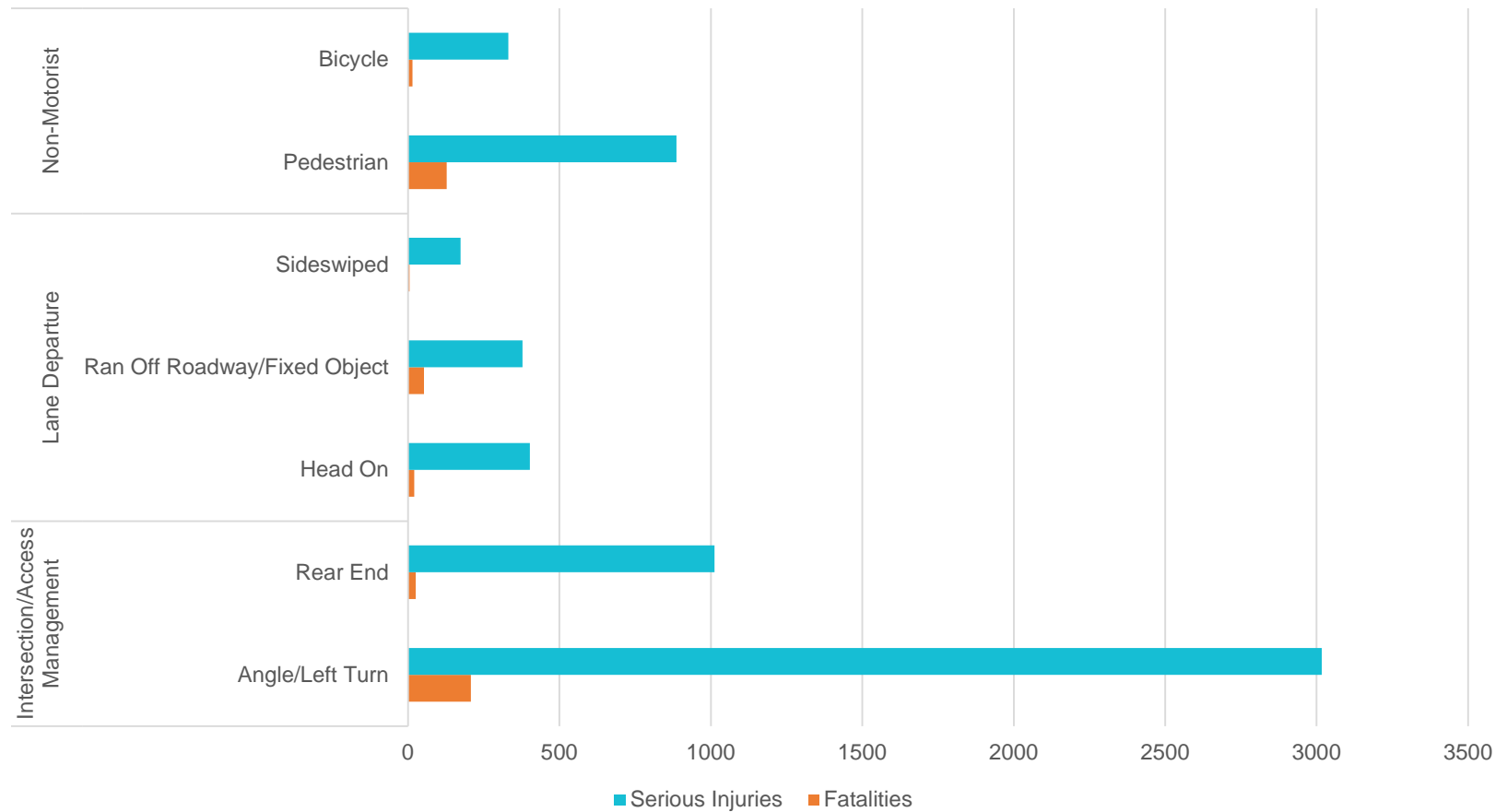




# Intersection Collision Types

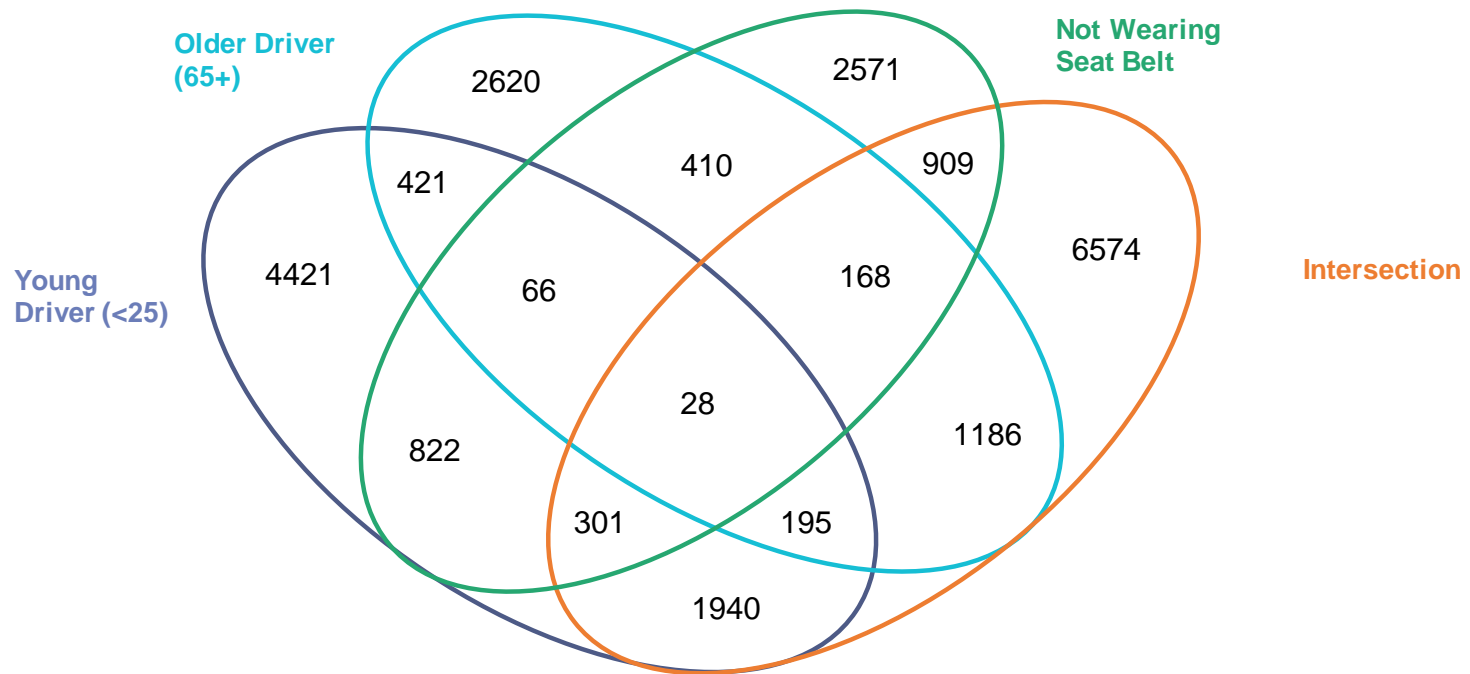
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Intersection Crash Injury Severity by Collision Type



# Contributing Factors (Fatalities and Serious Injuries 2013-2017)

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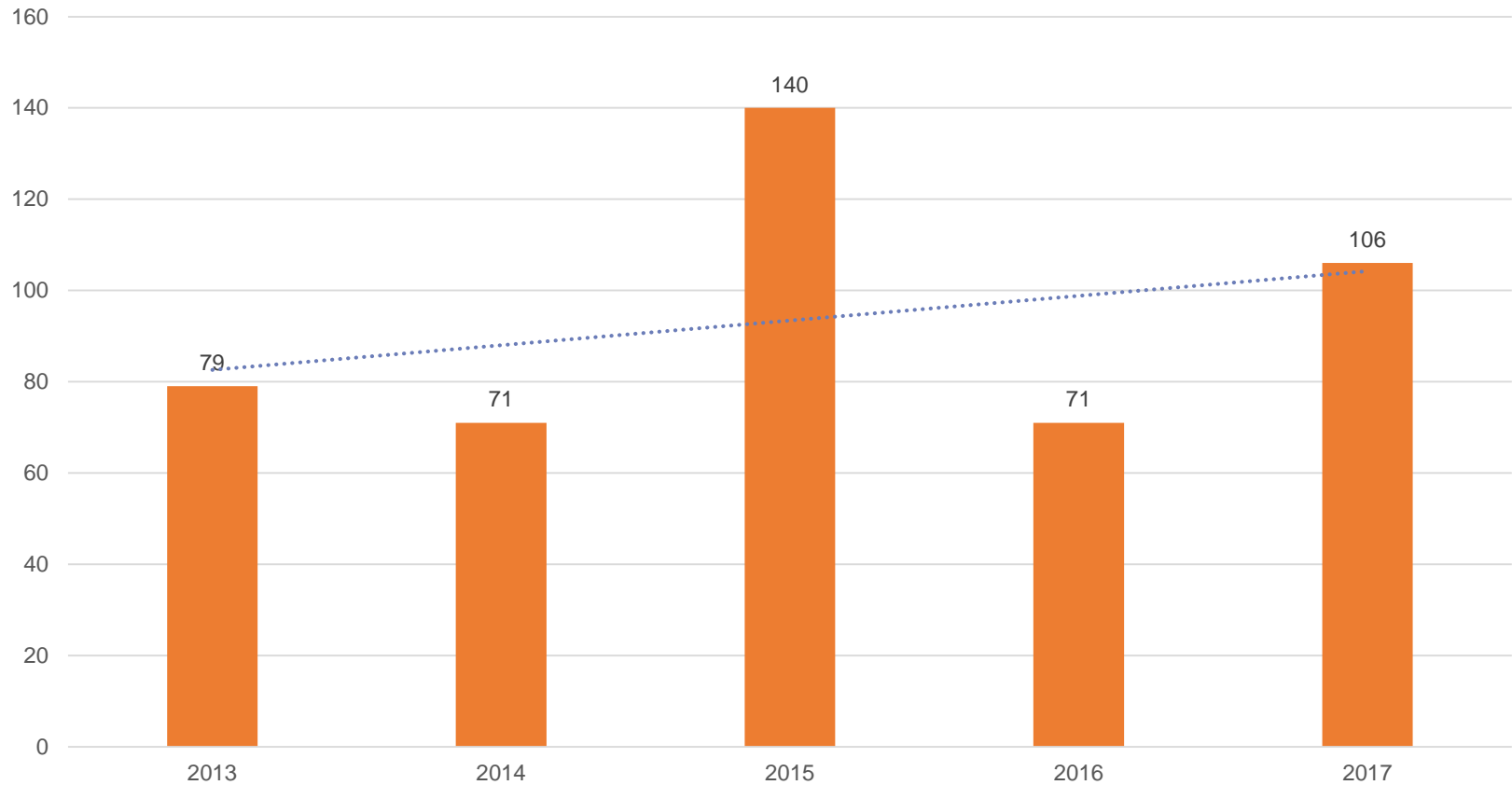
# MAJOR ARTERIALS



# Major Arterial Fatalities

Draft data for committee discussion only

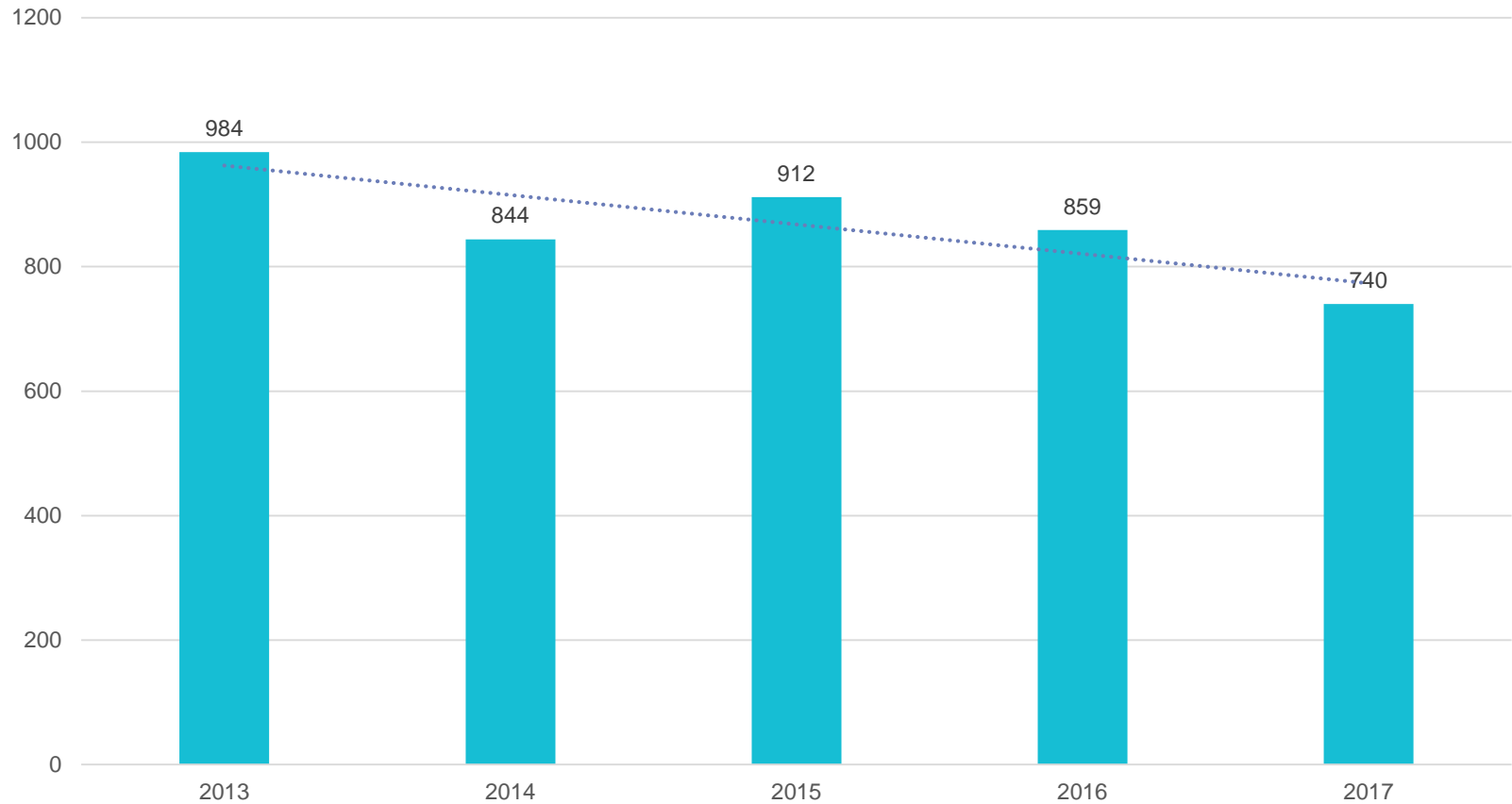
Total Regional Fatalities along Major Arterials (State Data)



# Major Arterial Serious Injuries

Draft data for committee discussion only

Total Regional Serious Injuries along Major Arterials (State Data)



# Major Arterial Crash Severity by Jurisdiction

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Intersection Crash Severity by Jurisdiction			
Jurisdiction	Fatalities	Serious Injuries	Total Crashes
District of Columbia	44	618	45775
Charles County, MD	37	443	5422
Frederick County, MD	26	89	3665
Montgomery County, MD	98	851	25836
Prince George's County, MD	165	727	23564
Arlington County, VA	9	98	4231
Fairfax County, VA	42	803	17307
Fauquier County, VA (urbanized area)	2	55	1160
Loudoun County, VA	12	142	4585
Prince William County, VA	24	195	5301
Alexandria, VA	2	69	2624
Fairfax City, VA	5	82	2357
Falls Church, VA	0	66	492
Manassas, VA	1	100	823
Manassas Park, VA	0	1	109
<b>District of Columbia</b>	44	618	45775
<b>Suburban Maryland</b>	326	2110	58487
<b>Northern Virginia</b>	97	1611	38989
<b>National Capital Region Total</b>	<b>467</b>	<b>4339</b>	<b>143251</b>



# Major Arterial Crash Severity by Time of Day

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Major Arterial Injury Severity by Time of Day			
Time of Day	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Midnight - 0:59 a.m.	20	115	2935
1:00 a.m. - 1:59 a.m.	23	93	2298
2:00 a.m. - 2:59 a.m.	22	94	2336
3:00 a.m. - 3:59 a.m.	21	74	2182
4:00 a.m. - 4:59 a.m.	19	42	1471
5:00 a.m. - 5:59 a.m.	14	83	2150
6:00 a.m. - 6:59 a.m.	19	154	3949
7:00 a.m. - 7:59 a.m.	12	182	6374
8:00 a.m. - 8:59 a.m.	8	221	7984
9:00 a.m. - 9:59 a.m.	11	209	7331
10:00 a.m. - 10:59 a.m.	15	187	6607
11:00 a.m. - 11:59 a.m.	14	193	6687
12:00 p.m. - 12:59 p.m.	13	222	7697
1:00 p.m. - 1:59 p.m.	17	225	7959
2:00 p.m. - 2:59 p.m.	13	227	8617
3:00 p.m. - 3:59 p.m.	14	297	10198
4:00 p.m. - 4:59 p.m.	22	274	10385
5:00 p.m. - 5:59 p.m.	23	309	11193
6:00 p.m. - 6:59 p.m.	30	281	9855
7:00 p.m. - 7:59 p.m.	29	199	6929
8:00 p.m. - 8:59 p.m.	28	167	5267
9:00 p.m. - 9:59 p.m.	29	189	4859
10:00 p.m. - 10:59 p.m.	22	153	4379
11:00 p.m. - 11:59 p.m.	29	149	3601



# Major Arterial Crash Severity by Day of Week

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Major Arterial Injury Severity by Day of the Week			
Day of Week	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Sunday	82	595	15369
Monday	60	583	19502
Tuesday	48	615	21577
Wednesday	59	603	21487
Thursday	66	623	21882
Friday	69	671	23826
Saturday	83	649	19609





# Major Arterial Crash Severity by Month of Year

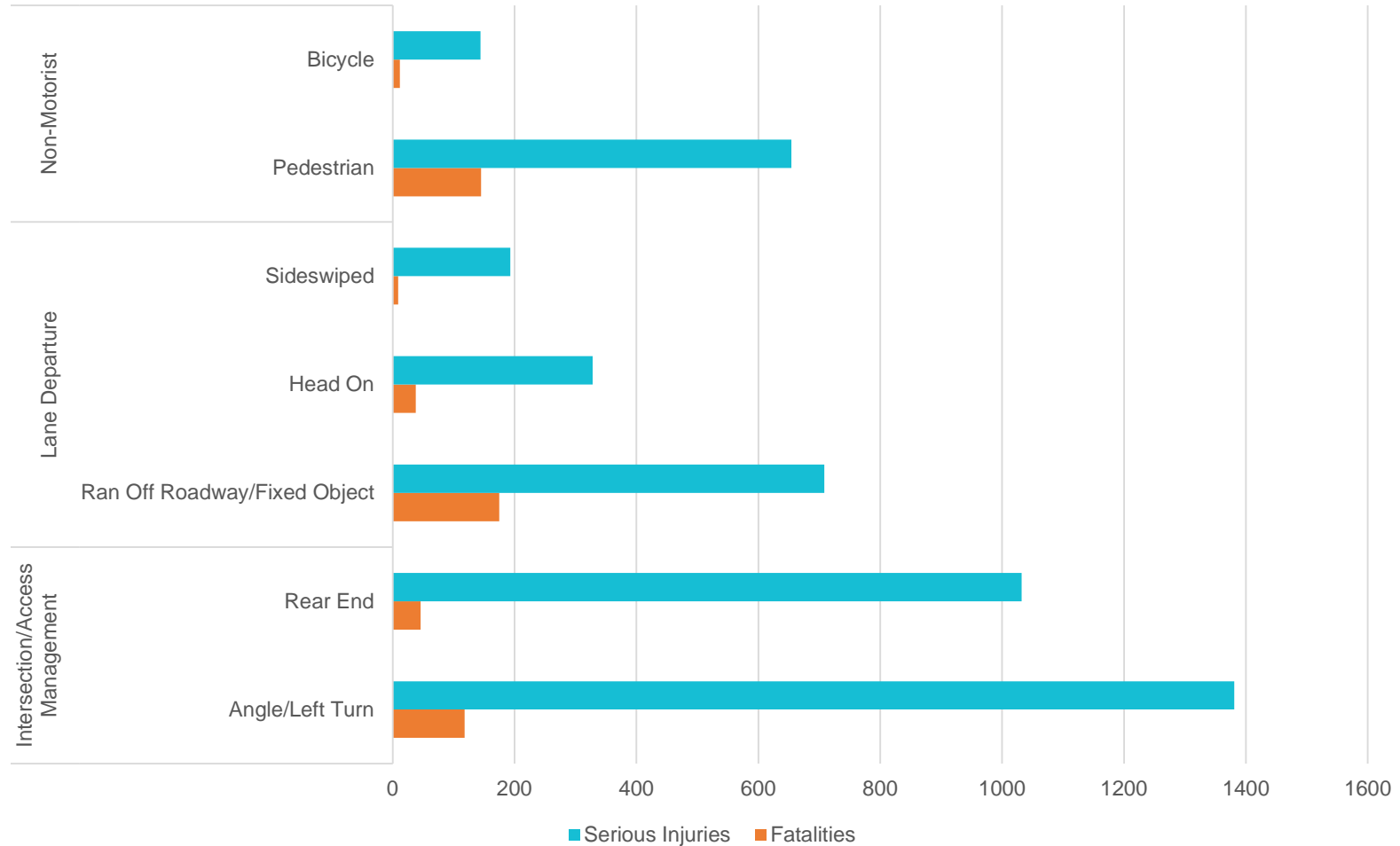
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Major Arterial Injury Severity by Month			
Month	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
January	41	309	11346
February	30	279	9999
March	33	319	11133
April	38	348	11711
May	31	427	12621
June	46	378	11704
July	34	390	11432
August	42	377	11478
September	36	397	12205
October	41	400	13707
November	54	371	13050
December	41	344	12866



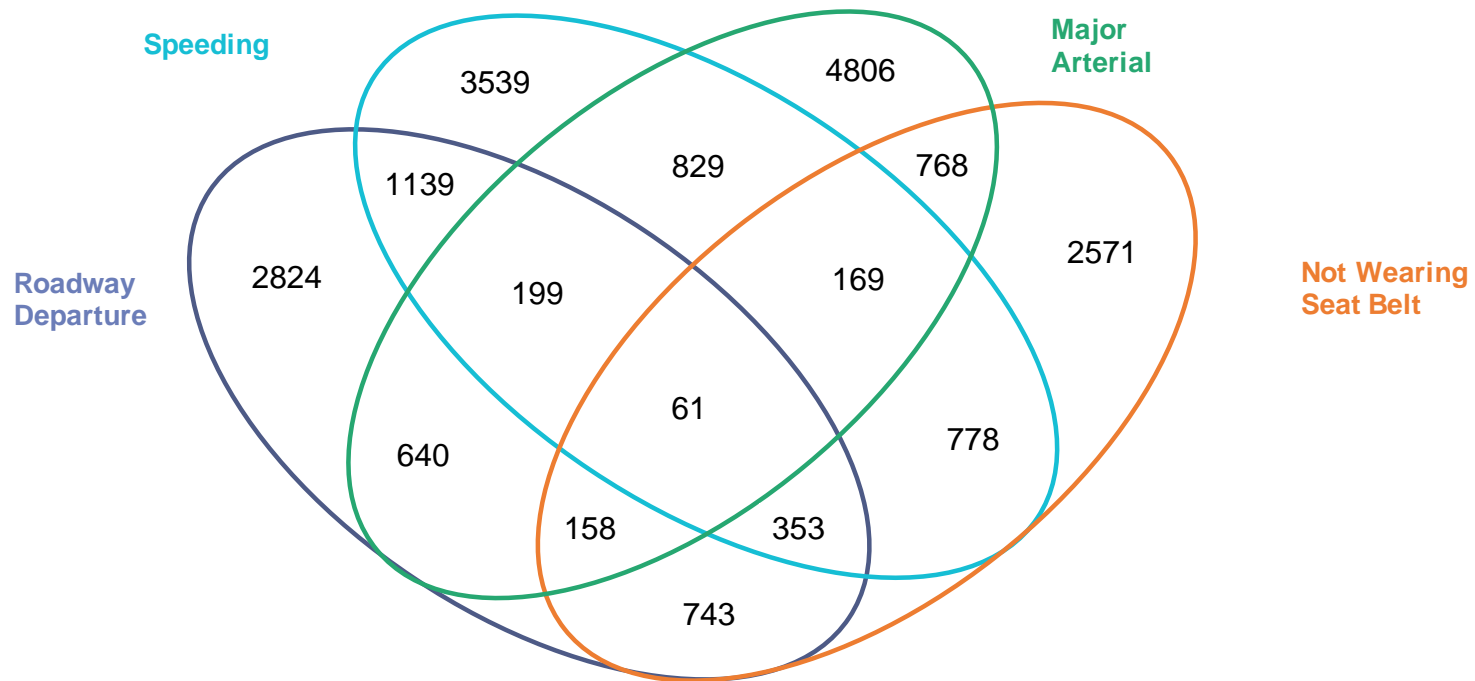
# Major Arterial Collision Types

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# Contributing Factors (Fatalities and Serious Injuries 2013-2017)

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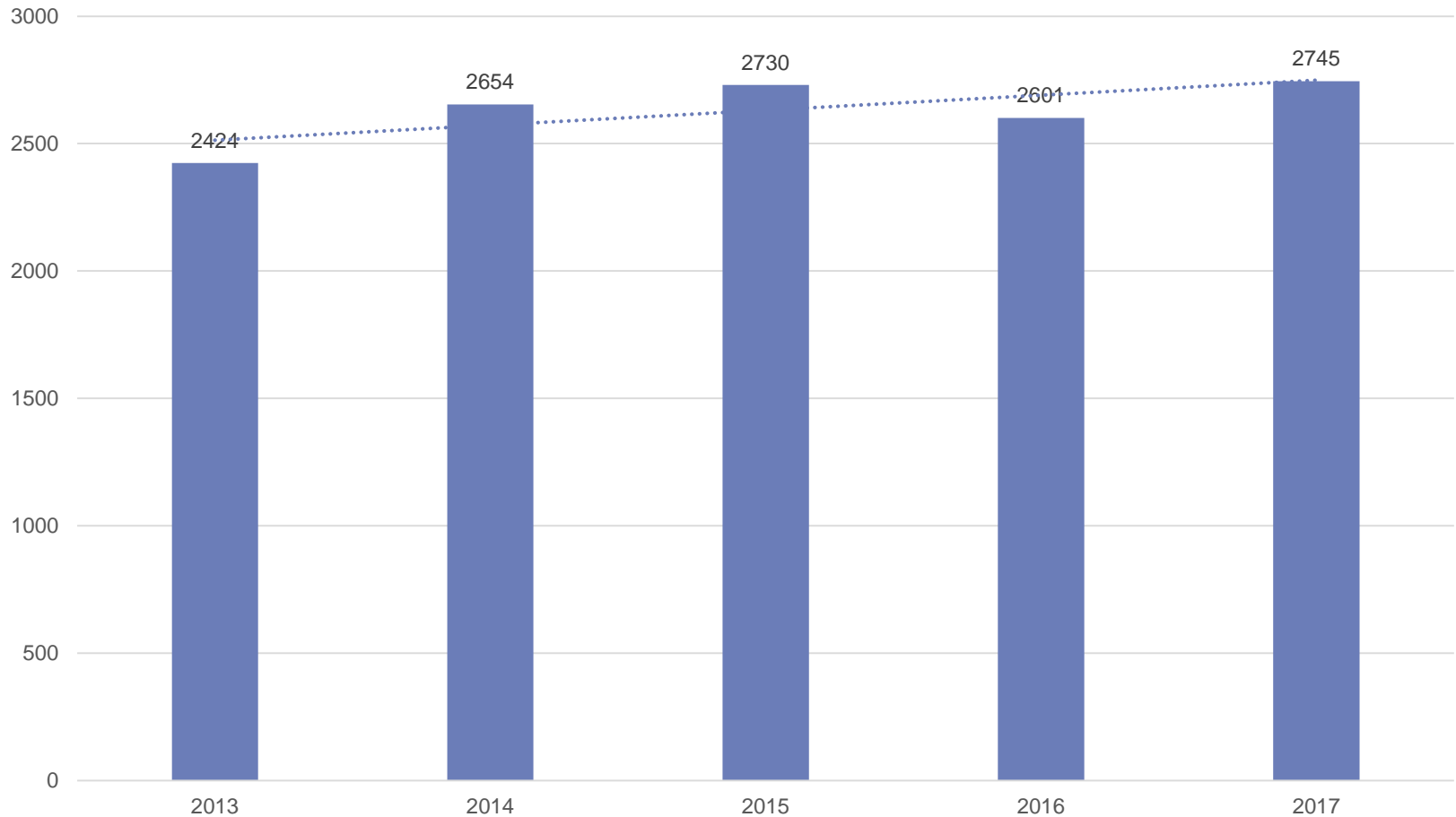
# Questions?



# Pedestrian Crashes

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Total Regional Pedestrian Crashes (State Data)



# Pedestrian Crash Severity by Light Condition

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Pedestrian Injury Severity by Light Condition			
Light Condition	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Dawn	7	41	245
Daylight	90	922	7443
Dusk	4	41	333
Dark (Lighted)	157	603	4033
Dark (Not Lighted)	86	188	716
Dark (Unknown Lighting)	4	22	128
Unknown	4	13	256

# Pedestrian Crash Severity by Age

Injury Severity by Pedestrian Age			
Pedestrian Age	TPB Region		
	Fatalities	Serious Injuries	Total Pedestrians in Crashes
Younger than 5	9	27	351
5-9	2	52	488
10-14	2	70	665
15-19	15	148	1088
20-24	28	205	1495
25-29	22	204	1584
30-34	30	145	1344
35-39	29	119	1057
40-44	20	94	828
45-49	24	132	905
50-54	33	129	928
55-59	33	114	843
60-64	35	104	766
65-69	13	80	490
70-74	20	48	314
75-79	16	39	216
80-84	10	14	119
Older than 84	10	25	147



# Pedestrian Crash Severity by Functional Class

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Pedestrian Injury Severity by Functional Class			
Functional Class	TPB Region		
	Fatalities	Serious Injuries	Total Crashes
Collector	38	288	2220
Expressway	10	40	250
Freeways	26	111	500
Major Arterial	146	674	4875
Minor Arterial	109	641	4650
Ramp	5	18	94

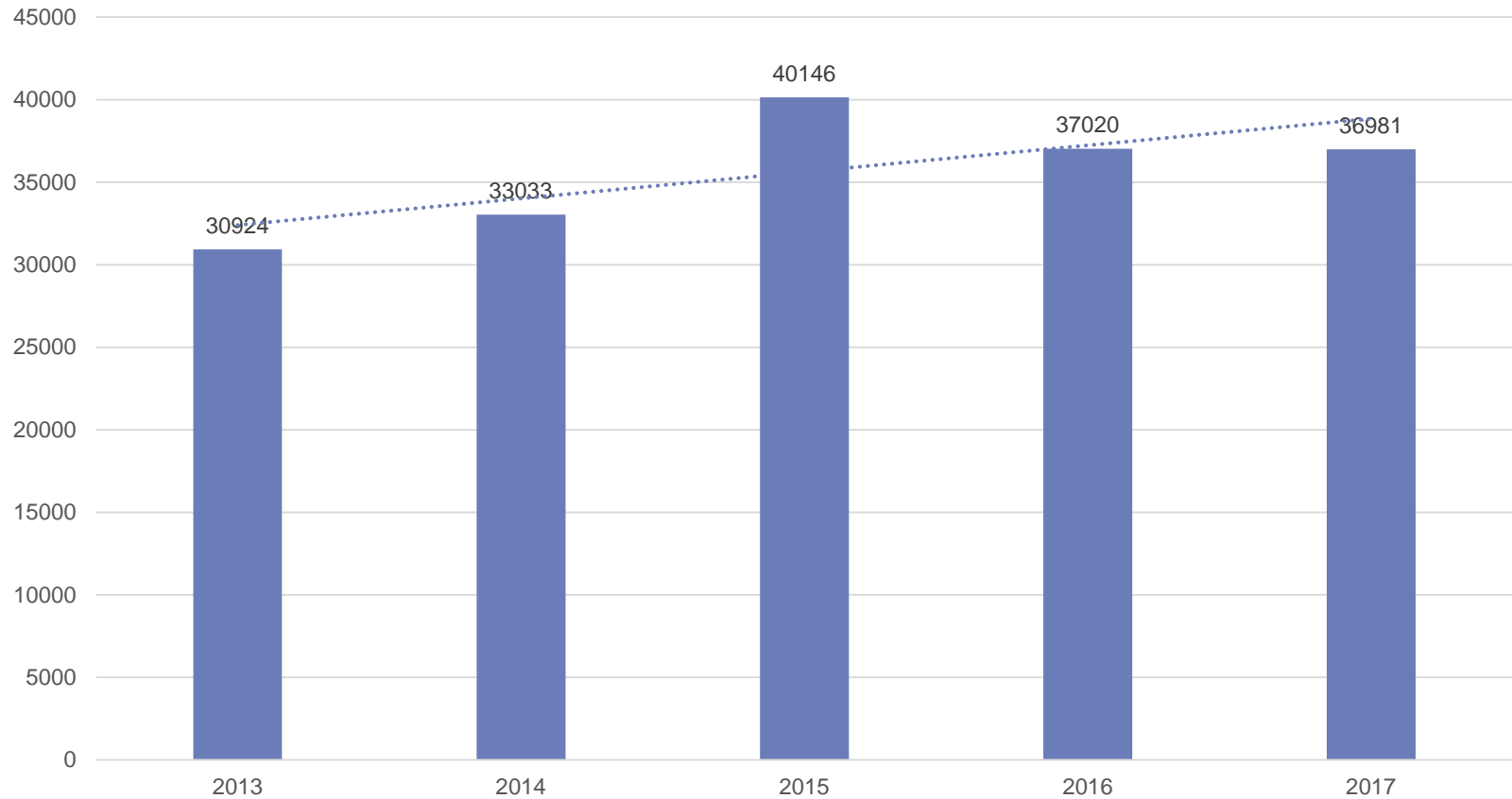




# Intersection Crashes

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Total Regional Crashes at or Near Intersections (State Data)



# Intersection Crash Severity by Light Condition

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Intersection Injury Severity by Light Condition			
Light Condition	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Dawn	8	137	3393
Daylight	189	3778	117031
Dusk	11	177	4528
Dark (Lighted)	160	1642	44311
Dark (Not Lighted)	61	347	6021
Dark (Unknown Lighting)	3	35	902
Unknown	1	25	1919

# Intersection Crash Severity by Collision Type

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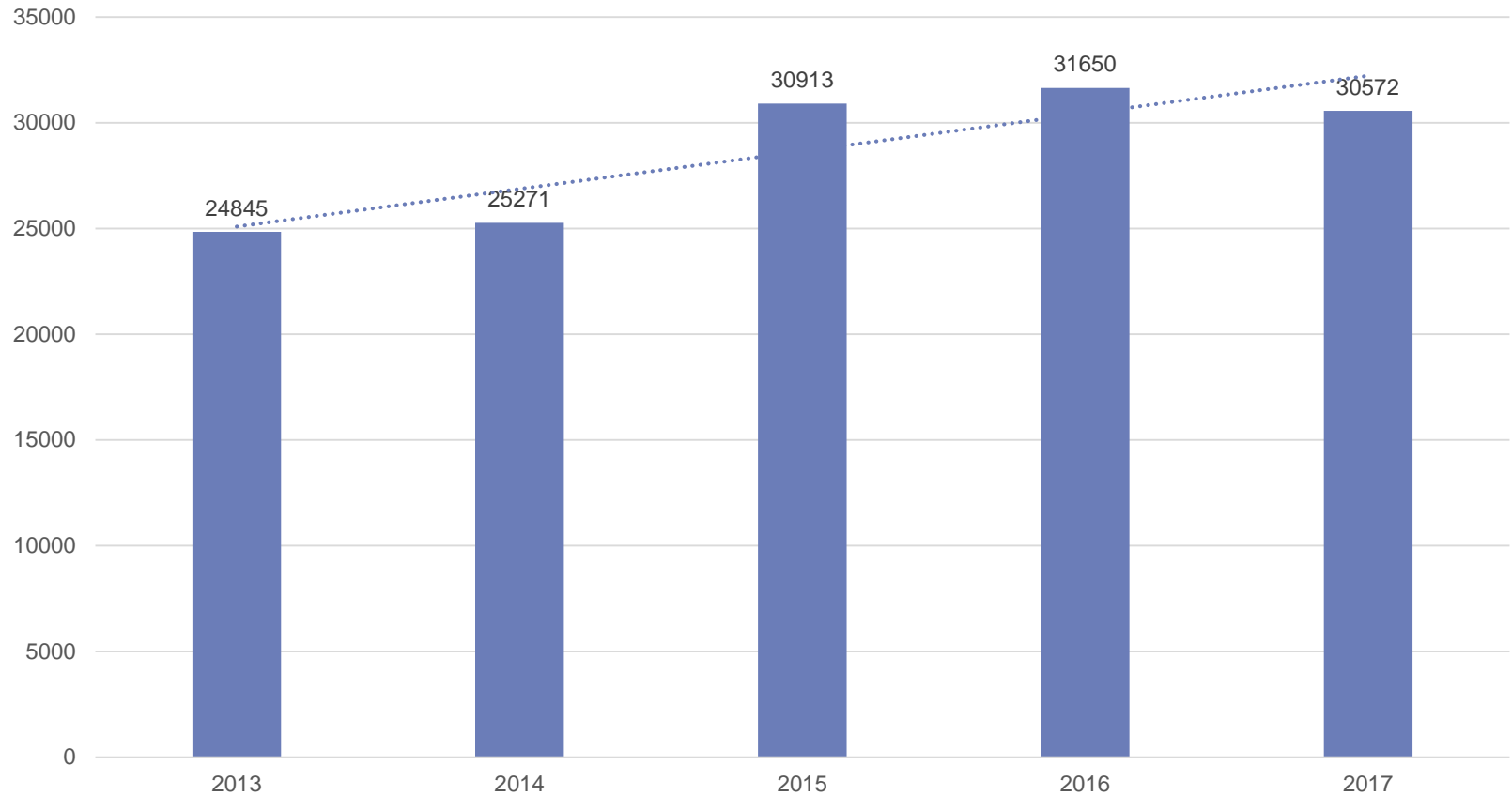
Intersection Crash Injury Severity by Collision Type			
Contributing Circumstances	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Angle/Left Turn	208	3017	67267
Rear End	26	1012	54122
Head On	21	402	6514
Ran Off Roadway/Fixed Object	53	378	8439
Sideswiped	5	174	22802
Pedestrian	128	886	6619
Bicycle	15	331	3643



# Major Arterial Crashes

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Total Regional Crashes along Major Arterials (State Data)



# Major Arterial Crash Severity by Light Condition

Draft data for committee discussion only

Major Arterial Injury Severity by Light Condition			
Light Condition	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Dawn	7	93	2671
Daylight	163	2653	92243
Dusk	11	98	3444
Dark (Lighted)	174	1099	35097
Dark (Not Lighted)	109	343	6244
Dark (Unknown Lighting)	1	28	949
Unknown	1	20	2068



# Major Arterial Crash Severity by Collision Type

Draft data for committee discussion only

Injury Severity by Major Arterial Collision Type			
Major Arterial Control Type	National Capital Region		
	Fatalities	Serious Injuries	Total Crashes
Angle/Left Turn	118	1381	34657
Rear End	46	1032	49691
Ran Off Roadway/Fixed Object	175	708	13912
Head On	38	328	4303
Sideswiped	9	193	23367
Pedestrian	145	654	4771
Bicycle	12	144	2032

